DOOR COUNTY
Planning Department

December 31, 2003

Toni Herkert
WI Dept. of Natural Resources
WT/2 Box 7921
Madison, WI 53707-7921

Re: Proposed NR115 revisions

Dear Toni:

By way of background, the Door County Planning Department has administered the shoreland management program in Door County since June 12, 1968. In addition to the shoreland zoning regulations, we administer comprehensive zoning within 8 of Door County's 14 towns. We also administer the county Floodplain Zoning Ordinance and the county Land Division Ordinance but do not administer sanitary regulations. Our county consists of nearly 250 miles of Great Lake shoreline plus additional shorelands around interior lakes, streams and rivers. Current staffing includes 4 full-time zoning administrators doing only zoning work and 1 planner doing land division work. The zoning administrators issue between 800 and 900 zoning permits a year, inspecting every site prior to issuance of those permits. In addition, other inspections are made to determine compliance with regulations and to advise property owners of the implications of regulations at their specific sites. In all, easily more than 1200 sites are inspected per year. The current zoning staff have a combined years of work experience in this field of over 50 years. I offer this as background to show that we are seriously involved in administering the county's zoning program. We are not like some counties where there is a single staff person doing primarily sanitary work for whom shoreland zoning is a secondary matter. We are also not a county in which the program is essentially delegated to town officials with virtually no day to day administration or inspection provided by county staff. This is program to which we are seriously committed.

The following comments will relate to the 16 page listening section comment package but I intend to take liberties with format so as to provide additional information.

I. Shoreland Buffers

1a. & 1b. Under the current NR115 regulations related to the cutting of trees and shrubbery in a strip of land 35' wide inland from the ordinary high water, mark one finds the weakest portion of the shoreland program. There is very little public understanding or support for this concept. Therefore, it troubles me that so much of what is being proposed in the entire package relates to shoreland buffers. Especially in a Great Lakes county where there is often no one "across the lake" to look at the shoreline,

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the visual aspects seem less important. In fact, there is an element of the population that enjoys cruising the shoreline to look at structures. If I had to choose, Option 1b would be preferred.

1c. I do not have particular concerns about structures or activities allowed in the primary buffer. I do note that the WDNR is asking the counties to be very strict in the primary buffer but yet routinely approves large dimension stone riprap and occasionally solid piers which are much more intrusive visually and from a wildlife standpoint than are the structures you ask the counties to regulate on the upland.

1d. No

1e. Yes. I believe that the property owner needs to have the option of multiple corridors provided that the width does not exceed the arbitrarily determined maximum. Many sites lend themselves to two smaller corridors rather than a single corridor.

In general, on a state-wide basis I seriously believe that the proposals of a strictly regulated primary buffer, a less regulated secondary buffer and view access corridors will not work and will not be administered by the counties. At recent session of the East Central Wisconsin County Code Administrators several persons were noted to simply laugh at the idea of administering and enforcing these regulations.

II Ordinary High Water Mark Setbacks

2a. Yes. This is a ridiculous question to ask since state law allows piers within the shoreland setback. Where else are you going to put them? Back 75' from the water?

2b. See Item 2a. above.

2c. Yes.

2d. Yes.

2e. Although small structures within the shoreland setback may seem like a non-issue, the very inclusion of this concept that various sorts of recreational or lawn equipment constitute structures will put counties in a difficult situation. Facing neighbor to neighbor battles, the counties will be asked to force some property owner to move his canoe out of the shoreland setback. You must exempt these pieces of equipment and other very small structures from the definition of "Structure." There is no way that we are going to walk up and down 250 miles of shoreline and ask people to move their canoes or shore stations off of the water front.

2f. Yes.

2g. See comment Item 2e.

2h. I have no particular concern about small structures or pieces of recreational equipment located within the shoreland setback area. See comment related to boathouses below.

2i. Rather than allowing boathouses at a 75' setback, if this is how WDNR is going to go, you should simply not allow boathouses and treat these structures as normal accessory structures.

2j. believe there is a place for modestly designed boathouses in the near shore area.

2k. I believe height, design and color considerations are valid. Size will very widely depending on the nature of the water body and the nature of the boat to be stored. I would hope that there would be design standards restricting height to something like 12' to 16', prohibiting roof top decks, and prohibiting windows and patio doors.

We find that many existing boathouses have become obsolete due to widely fluctuating water levels and the increasing size of boats. They are often converted to "party rooms". Although it is difficult to stop this activity, we have had several successful enforcement cases on this point. At least new boathouses should be required to meet design standards which discourage the party room conversions.

III. Nonconforming Structures

3a. The very wording of this question belies a misinterpretation of Section 59.69(10). Counties do not need to be "allowed" to replace the 50% rule. Counties are not required to have the 50% rule and we eliminated it years ago. Another argument is that the 50% rule applies to nonconforming "uses" and there is no statutory, legal authorization to regulate nonconforming "structures" at all.

Door County has handled this item exceedingly well by simply requiring all additions to structures to comply with setback requirements. This would be the case if an entire new structure were built so why not allow an addition to a nonconforming structure at a complying location? We do allow structural alterations which typically mean roof alterations to a nonconforming structures provided that there is no increase in floor area. What we do is so simple and works so well that apparently WDNR and other counties just don't get it.

WDNR also needs to be aware that there are nonconforming structures that exist for reasons other than water setback. Such things as side yard setback, height, floor area and impervious surface regulations all create nonconformities which seem to have been overlooked as WDNR has developed the nonconforming structure regulations.

3b. Yes. Although the counting of structural components as proposed will be impossible to administer.

3c. See comment in Item 3a.
3d. Yes.
3e. No.
3f. No. I envision the situation where a garage is located too close to a road therefore making it a nonconforming structure. However an addition to that same garage may be at a complying location and therefore, such expansion should not be prohibited.

3g. Again the Door County provisions of Section 3.07 of the Door County Zoning Ordinance make this very simple. The setback requirement from the ordinary high water mark is determined either at 75' or by an averaging formula to a setback of not less than 40'. Additions to nonconforming structures must meet the setback requirements. It is very simple.

3h. This proposal has always seemed extremely odd to me. If someone has a substandard residence, why would one prohibit the expansion of that residence provided that the expansion complies with the setback requirement? By prohibiting the expansion you are anticipating that people will tear down small structures and rebuild a larger structure further inland. In practice, this happens almost weekly in Door County but nevertheless there are cases where the goal of expanding the residential living space to comply with minimum floor area requirements should be encouraged which is the antithesis of what is proposed in Item 3h.

3i. We find virtually no single family homes that are newly constructed to be less than 1500 sq.ft. It will simply not be acceptable to limit the size of homes based on square footage.

3j. No.

3k. No. This proposal puts too much discretion in the hands of zoning administrators. If an expansion of a landward site is not possible, then a variance procedure would be more appropriate since the site apparently has inherent characteristics unique to that site which would serve as grounds for the variance.

3l. If through setback averaging, expansion of a structure can be allowed in what would otherwise be the secondary buffer that ought to be allowed.

3m. This definition will not work. In dealing with nonconforming structures, one would be unable to count structure components since they would be covered by siding and interior finishing. If one were to speak of major reconstruction as 50% or more of the linear perimeter of the structure, this could be measured but since this is not time restricted, a series of additions could be constructed which would essentially build a new structure 50% at a time.

3n. This proposal appears to violate everything that went before which would allow a new structure to be built on a former site. If the WDNR want to go this way, then everything else about nonconforming structures should be thrown out and rebuilding should simply be allowed.

3o. This is essentially the option which happens in Door County. We have numerous tear downs with rebuilding at a compliant location. Additions to nonconforming structures must also be at a compliant location. My only apprehension is the phrase "if available." If no area was available on a specific site, a variance appears to be a realistic option.

3p. See comment 3m. above. In practical terms, what is talked about for major reconstruction in Items 3m. and 3h. will not work.

3q. See comment 3o.

3r. Yes.

3s. We have done a limited amount of vegetative mitigation. It is difficult because it runs so contrary to the wishes of the property owner and requires so much time to administer. Nevertheless, it may be the best we can do.

IV. Minimum Lot Size – Single Family Homes, Duplexes and Commercial Development

It troubles me that NR115 is now attempting to impose different lot sizes depending on proposed uses. To this point, NR115 has been silent on uses other than as one could interpret the shoreland-wetland provisions. I believe that at one time NR115 specifically empowered counties to establish their own use regulations. Door County currently has over 30 pages of performance standards for various uses many of which will be undermined by the proposed use regulations enumerated in IV. and V. of the proposal.

4a. No.
4b. Yes.
4c. I would advise you that Door County and many other counties have established much larger minimum lot sizes in the shorelands in all or parts of the area under their jurisdiction. Proposal 4b. has been well received and should stay as a statewide minimum allowing counties, such as ours, to increase lot sizes as appropriate.

4d. No.
4e. There is nothing magic about 5,000 sq.ft. In fact, a new home even served by an on-site waste disposal system can be placed on an area much smaller than 5,000 sq.ft. The imposition of a 5,000 sq.ft. requirement would either lead to numerous variances or to a regulatory taking of property. At least in this county, the "good" building sites are gone and what remains are properties with smaller building sites to which architectural creativity must be applied to make them buildable. Nevertheless, an artificial minimum building area can not be justified.

V. Minimum Lot Size – Multiple Family Development, Hotels, Motels, and Resorts

As explained at the WCCA Conference at Superior and as the draft distributed at that meeting explains, WDNR is proposing an artificial distinction between multifamily developments, resorts, hotels and motels. Essentially what is proposed is an intrusion into the matter of ownership. Door County has gone to great length to develop what we call multiple occupancy development standards which deal with all of these categories. We regulate density based on number of bedrooms. A very common type of development in Door County is the "condominium hotel." Typically two and three bedroom units are built in a multifamily-type structure. Individual units are sold and may be owner occupied as in a multifamily development or may be rented in the absence of an owner much like a hotel. We have gone to great pains to create Section 4.08(8) of the Door County Zoning Ordinance to deal with this matter and what is proposed would undercut all of our efforts during the past 10 years. Therefore the following comments:

5a. No.
5b. No.
5c. Yes.
5d. See comment above.
5e. In a resort type setting, there are often multiple buildings involved and therefore multiple VACs must be allowed. This is a no brainer.

VI. Lot Size Reduction for Conservation Development

It is ironic that much of the justification being used for the preservation of primary buffers relates to the density of development in the shoreland areas. The whole concept of the conservation development section runs counter to the justification related to primary buffers. Secondly, our experience is that developers shy away from conservation subdivisions in large part because there is very limited market for such projects. Some communities in Northeast Wisconsin have bought into the idea and attempted to mandate conservation subdivisions only. This has caused so much political unrest that the entire idea often gets dropped.

6a. Yes.

6b. The percentage of permanent open space to be dedicated should be a local determination. In Door County for example dedication requirements vary from 25% in small lot residential zoning districts to as much as 85% in more rural areas. As a statewide minimum, the 40% number should probably be reduced.

6c. Wetlands, floodways and primary buffers could be excluded in the conservation area calculation. Since secondary buffers are buildable areas those should not be excluded.

6d. Yes.

6e. See comment to 6a.

6f. See comments above.

6g. Yes.

6h. No.

6i. No.

6j. In a typical multifamily or resort development, lots are not created. More likely, existing lots would be consolidated and redeveloped as a single parcel. Therefore, the concept portrayed in Item 6h. appears to be misguided.

VII. OHWM Setback Reductions and Nonconforming Lot Provisions

This section mixes two quite different concepts. Those concepts related to nonconforming lots should be addressed in conjunction with the lot area requirements of Section IV (and V). Door County establishes three categories of lots. Conforming lots consist of two types: 1) those which conform with the new lot standards, and 2) those which do not conform with the new lot standards but which predated the zoning ordinance and meet an imposed lower threshold for lot width and area. A third category of lot is known as a nonconforming lot and does not meet even the minimum threshold for "grandfathered" conforming lots (2) above). WDNR is proposing only two categories.

7a. We currently have a similar provision and therefore support it. However one must acknowledge that properties are not treated equally under this concept. That is, if a single owner owns a nonconforming lot it may be buildable but if a single owner owns two similar adjoining lots the lots would not be buildable individually. It bothers me that we are treating properties differently based on ownership.

7b. Yes.

7c. No.

7d. See comment 7a. above.
7e. None.
7f. The concern relates to the size limits proposed for nonconforming structures. It could be that a lot is nonconforming due to 1' shortage of width but may have more than ample area. For example, the size of a home on a lot which is 99' wide x 400' deep should not be restricted. That home should simply be required to comply with the setback requirements.

7g. No.
7h. Yes.
7i. No.
7j. No.
7k. No.
7l. No. In most cases a 30' deep building envelope is insufficient. I would propose at least a 32' deep building envelope to comply with standard construction practice.

7m. I believe setback averaging should be available on conforming and nonconforming lots uniformly. It should use an averaging formula based on two adjoining principal buildings within 100' or one adjoining principal building and the 75' setback if that is the circumstance.

7n. This item proposes no standard for reducing the roadway setback. It has been proposed that you would first reduce the roadway setback as much as allowed by the governing body. The roadway setback is the standard allowed by the governing body. To say anything else would imply that one would go from the required setback to the right-of-way line which is the only other logical conclusion. If the WDNR would propose a proportional reduction of some sort, you need to express that so that it may be evaluated.

7o. Setback averaging should not be allowed to such an extent that it would infringe on the primary buffer. Door County currently has a 40' minimum under the averaging formula. That being the case, additional conditions would be irrelevant since the primary buffer would be preserved.

7p. This concept is inherently unfair since most of the structures would be set well behind the reduced ordinary high water mark setback line and portions of the structure may even comply with the full 75' setback. Therefore the reasons stated previously, I do not believe that the size limitations for nonconforming structures should apply since these structures would not be nonconforming.

7q. I believe the proposal is excessively restrictive as written. There certainly would need to be an allowance for the garden shed or some other low impact structure without the need for extraordinary regulations especially related to screening.

VIII. Filling, Grading, Lagooning, Dredging, Ditching and Excavating

8a. No.
8b. If WDNR is going to allow riprap and especially dimension stone riprap immediately below the ordinary high water mark without any protection of the primary buffer, I

see no reason that retaining walls should not be allowed nor should they require additional primary buffer restoration.

8c. See comment 8b. above.

IX. Impervious Surface Provisions

9a. Yes.
9b. No.
9c. For nearly 10 years Door County has impervious surface regulations in the shoreland. A typical impervious surface maximum in a residential setting would be 45%. On a typical 100' x 200' lot, only 4,000 sq.ft. of impervious surface would be allowed under the WDNR proposal. Assuming a 100' of driveway and the current Door County mandate of 15' width, 1,500 sq.ft. of the allowable 4,000 sq.ft. would be used up simply in the driveway. That leaves only 2,500 sq.ft. for house, garage, walkways and other surfaces. In that implementing BMPs of some unknown scope would be nearly as difficult as restoring primary buffers, the percentage of ISR needs to be increased to provide reasonable development possibilities.

X. Mitigation Provisions

10a. No.
10b. Yes.
10c. Yes.
10d. Mitigation is very difficult to administer for two reasons. Typically mitigation will involve vegetation maintenance or restoration which is a huge workload on county staff. Secondly, county staff is not well versed in vegetative matters. Within the context of a zoning regulation it is always difficult to administer discretionary provisions of the ordinance. If this entire program comes down to mitigation, certainly the primary buffer is the area which needs to be addressed. I believe on a statewide basis, in reality, very little will be accomplished.

XI. Agriculture

11a. No.
11b. No.
11c. Yes.
11d. Yes.
11e. I am aware of the practices of large-scale agriculture which are now fence line to fense line. When streams are in the way, vegetation is removed right to the bank or even below. To exempt farms from NR115 standards would be yet another subsidy of agriculture. I have no confidence that NR151 standards will effectively deal with these natural environmental corridors.

11f. Failure to regulate under NR115 if NR151 would not apply would mean these properties would be unregulated. Agriculture ponds if declared navigable should be treated like any other navigable water body.

11g. If minimal vegetation removal is required that would likely be within the ditch itself. This ought to be allowed but adjoining vegetation ought to remain in place.

11h. Yes.
11i. In that fences in the shoreland area tend to run perpendicular of the shore, I believe that even solid fences have a place to separate neighbors in a residential setting.

11j. Yes.
11k. Yes.
11l. Although I view this as another possible subsidy of agriculture, I am aware that there are certain situations where facilities can only be placed within the water setback due to the presence of existing structures.

11m. Yes.
11n. No.
11o. Yes.
11p. Concerning question 11n., in that you are dealing with expansion of existing facilities, that expansion can almost always be located outside of the shoreland setback. What is proposed could allow a small dairy barn located 70' from the ordinary high water mark to become 1,000-cow industrial farm with its attendant environmental problems.

XII. Forestry

12a. No.
12b. No.
12c. I have had to administer the forestry exemption of the current shoreland-wetland resolutions in relation to Wisconsin's Forestry Best Management Practices for Water Quality. These standards are not specific enough when applied to an individual case to give adequate direction. Therefore, at least the 35' primary buffer should be maintained along creeks in a forest harvesting setting. County zoning staff should not be asked to administer the forestry BMP since they may not be qualified to do so.

12d. No.
12e. I am aware of certain management activities that have occurred on state wildlife areas which are totaling inconsistent with the goals of NR115. Since many of the wildlife areas are managed for a single species, the approach is not as often balanced as one would prefer.

XIII. Recreational Areas Including Campgrounds, Public Access Sites and Marinas

13a. Yes.
13b. Yes.
13c. Yes.
13d. Yes.
13e. No.
13f. Yes.
13g. Yes.
13h. No. The lot size proposal for 13e. is excessively large.
13i. If campsites and associated buildings are required to meet the 75' setback, additional regulations are not justified.
13j. No.

13k. No.
13l. No.
13m. Yes.
13n. The reality is that the camping industry is becoming one of permanent sites. It is more important to regulate and/or prohibit such things as decks and additions at campgrounds rather than trying to regulate length of stay.

Public Access Sites

By definition, public access sites are proposed as boat access or carry in access which provides parking for vehicles with or without a trailer. WDNR needs to be aware of a very differing public access requirement of Chapter 236, Wisconsin Statutes, the state platting law. In that statute a 60' wide access is to be provided every half mile when land is divided. That form of access does not necessarily mean a boat access. WDNR is undoubtedly aware that conflicts arise when 50' to 66' wide town roads are proposed to be developed as boat launch sites. These sites are inadequate to provide ample parking and turning without trespass onto adjacent properties.

13o. Yes.
13p. No.
13q. No.
13r. Yes.
13s. No.
13t. No.
13u. Yes.
13v. WDNR's own boat launching sites consistently violate the buffer standards for single family development. We are currently facing those here in Door County. The concept of view access corridor is irrelevant in a boat launch setting. If one were to require a boat launch site to be 100' wide as proposed in 13s, 33' would be the maximum width of the launch ramp. In many cases that is inadequate. Similarly, almost all of the boat launch site, especially on a narrow parcel, ends up being road, driveway and pavement. Therefore, the 20% allowance or a BMP seem inappropriate.

13x. I don't see where height or size is particularly important at public access sites since they are typically few, if any, structures.

13y. I would agree that all boat launch sites should be treated the same. Often the private operator provides a better site than the public operator.

Marinas

13z. Yes.
13aa. No.
13bb. No.
13cc. Yes.
13dd. No.
13ee. No.
13ff. No.
13gg. See comments concerning public access sites.

13hh. See comments concerning public access sites.

XIV. Sanitary Regulations

14a. Yes. Here in Door County the Door County sanitary waste disposal program is handled by the Sanitarian's Department with five full-time persons including three sanitarians. That program should be separate from NR115.

14b. No.

XV. Other Issues.

15a. I do not believe that the proposed revisions to NR115 will provide greater consistency and less duplications of other regulations. Because of the multiplicity of options and the mitigation and BMP requirements, this program will be all over the board state wide. The standards need to be simple and concise.

There is nothing in the proposed revisions which will improve the shoreland management program in Door County. As stated in my initial introduction, we put a great deal of effort into this program and see the proposals to be largely a watering down of the regulations or at best a cumbersome, nitpickey complex set of rules which will be an administrative nightmare.

This letter will also serve as the preliminary notice that at the initiative of the Door County Resource Planning Committee (not the staff of the Door County Planning Department) a resolution of disapproval will be sent forward to the Door County Board of Supervisors for likely adoption at the January meeting. I believe you will see a ground swell of opposition to the proposals in part because of their complexity and also due to budgetary constraints. This program will not be able to be administered within existing staffing levels. Essentially, this becomes a nonfunded state mandate.

Sincerely,

David W. Sautebin

David W. Sautebin
Senior Zoning Administrator

DWS/wb

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE December 19, 2003 FILE REF: [Click **here** and type file ref.]

TO: Toni Herkert, WT/2

FROM Carroll Schaal, FH/3

SUBJECT NR 115 Rule Revision Proposals

Congratulations on completing the public listening sessions for your rule rewrite. By most accounts the process was perceived very positively. I'm sure you are relieved to have it behind you although there is much work ahead. Before moving on to the next phase of actual rule development, the Lake Partnership Team would like to offer its input on a few key issues.

Water Quality

One of the main purposes of NR 115 is to protect water quality. Science tells us that impervious surface is the primary determinant of a parcel's contribution to nonpoint source pollution. Therefore, more than any other option presented in the comment package, those presented under option IX relating to limiting impervious surfaces in the shoreland zone have the most potential to protect surface water quality.

Unfortunately the only option presented, a 20% impervious cap, will not provide any meaningful water quality protection. The science clearly shows that before a 20% impervious surface threshold is reached the damage is already done to the receiving water (see the attached analysis, "Evaluation of Proposed NR 115 Impervious Surface Caps", Panuska, Kirsch and Bannerman, 2003 WDNR). The science clearly indicates that once a threshold of 5% imperviousness is reached, runoff that goes unmitigated or untreated will have significant adverse impacts on the receiving waterbody.

The 20% impervious standard for development in the shoreland zone (a zone where we know development impacts are greatest because of the close proximity to surface water) would be less stringent than the standard required of "upland" developments of one acre or greater that are subject to NR 151. Development standards in the shoreland zone should be at least as restrictive as those required under NR 151 that is, impervious surfaces in the shoreland zone be limited to 5% unless 90% of the post construction runoff is treated with BMPs.

Buffers

Science clearly shows that all beneficial functions of buffers increase with buffer size. From a water quality aspect, our professional staff report that upon site inspections, most runoff from impervious surfaces bypasses the buffers in concentrated flow areas, usually within the cleared viewing access corridor (VAC) or on side lot swales, rendering the buffers mostly ineffective in protecting water quality, regardless of size. This simply reinforces our previous point that a stringent impervious surface cap and required BMPs will be the most effective means to protect water quality.

Viewing Access Corridor

The viewing access corridor (VAC) should be limited to 30 feet wide. We should be keenly aware of how this provision meshes with the provisions of our aquatic plant management program (NR 109 & 107) and Chapter 30 for maximum habitat protection and improved administration. For example, NR 109 limits unpermitted, manual removal of aquatic plants in the littoral zone to a thirty-foot wide corridor. Inherently then, its the Department's policy to confine habitat disturbance to maximum 30 foot corridor

on land and in the shallow water to maximize habitat functions. To that end NR 5 should acknowledge or reinforce this policy in concept at the least.

Administration

Many of the options do not increase environmental protection so much as seek to improve compliance and administration by addressing historic loop holes and inconsistencies. To that end, in the public listening sessions, there were many questions raised on how provisions such as mitigation and the placement of the VAC for example would be interpreted. A common response was that much of this would be left up to the county discretion to interpret under the guise that local flexibility is desired and beneficial. One of the biggest limitations to effective shoreland zoning has been varied level of enforcement and applicability from county to county. Minimum standards provided in a new NR 115 should be drafted explicitly with the goal to limit local discretion as much as possible.

In the same vein, many counties have provisions that exceed state minimums and utilize lake classification as a means for justifying greater restrictions on some waters. Somehow, NR 115 should not only acknowledge that but also support the notions of lake classification as well as providing legal and enforcement support to counties trying to defend regulations that go beyond minimum statewide standards.

Finally, since the proposals are the product of compromise reached by a diverse committee of varied interests, we suggest that the proposed draft be reviewed strictly from an objective scientific perspective by a group of nonpartisan scientists. The task of such a review would be to ask, "do the proposed rules meet the statutory objectives and the purpose statement of NR 115?" We feel that a purely scientific objective is needed to balance the eventual application of social acceptance.

In conclusion, I chose to limit my comments to key areas that I feel transcend many of the proposal options, areas where the greatest environmental benefits will be realized. In an attempt to be brief I may have been inarticulate. I would be more than happy to meet with you and discuss these comments or provide any other assistance you need as you prepare a draft rule.

Evaluation of proposed NR 115 Impervious Surface Caps

Prepared by: John Panuska (WDNR) and Kevin Kirsch (WDNR)
SLAMM Model output provided by: Roger Bannerman (WDNR)

The current proposed language for NR 115 pertaining to impervious surface area give readers provisions to choose from one of the following in support of:

> *9a. Limiting the amount of impervious surfaces with shorelands?*
> *9b. Limiting impervious surfaces within shorelands to 2,500 square feet or 20% of the lot area, whichever is less, unless the property owner implements best management practices (BMPs) that are designed to control post-construction runoff?*

Option 9b is a hybrid of two initial options presented at the June 24th NR 115 Advisory Committee. These options were (1) not to exceed 20% cap on imperviousness, and (2) impervious surfaces shall not exceed 5% unless 90% of post construction runoff is controlled. Option 9b was proposed by the builders in an obvious attempt to eliminate an impervious cap. Option 9b was moved forward with only a couple votes more than the original proposal requiring treatment beyond 5% imperviousness, however, more importantly, neither option 9a or 9b is based on science nor affords adequate protection to water resources. The science clearly shows that before the proposed 20% imperviousness threshold is exceeded, the damage has already been done to the receiving water. If the goal of NR 115 is to protect water quality, the current options are inadequate.

What follows is a discussion of the current science pertaining to the impacts of imperviousness and a reiteration of the original proposal and how it fits in with the current NR 151 regulations.

Runoff and Science:

As urbanization occurs, the proportion of the land surface covered by impervious areas typically increases. Having an increased amount of impervious area has been found to result in a corresponding increase in runoff volume, peak flow rate, runoff temperature and pollutant loading. The majority of the impervious area found in an urban setting is the result of rooftops and the transportation system, (roads and parking lots) and varies significantly even within a given land cover classification (Schuler and Holland, 2000). Figure 1 shows the change in runoff volumes from a grass condition to an impervious condition.

Figure 1: Increase in Runoff with Increased Imperviousness
(Summary of SLAMM model runs)

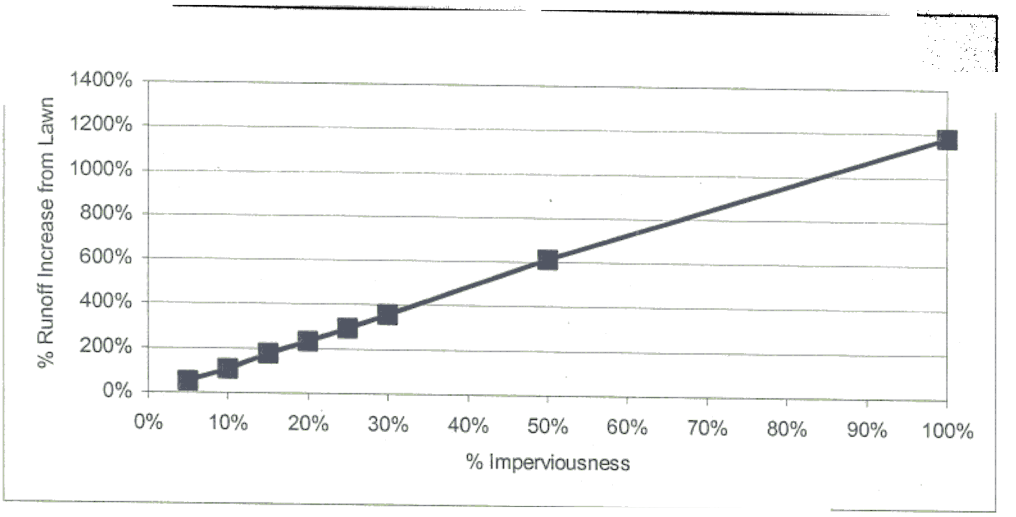
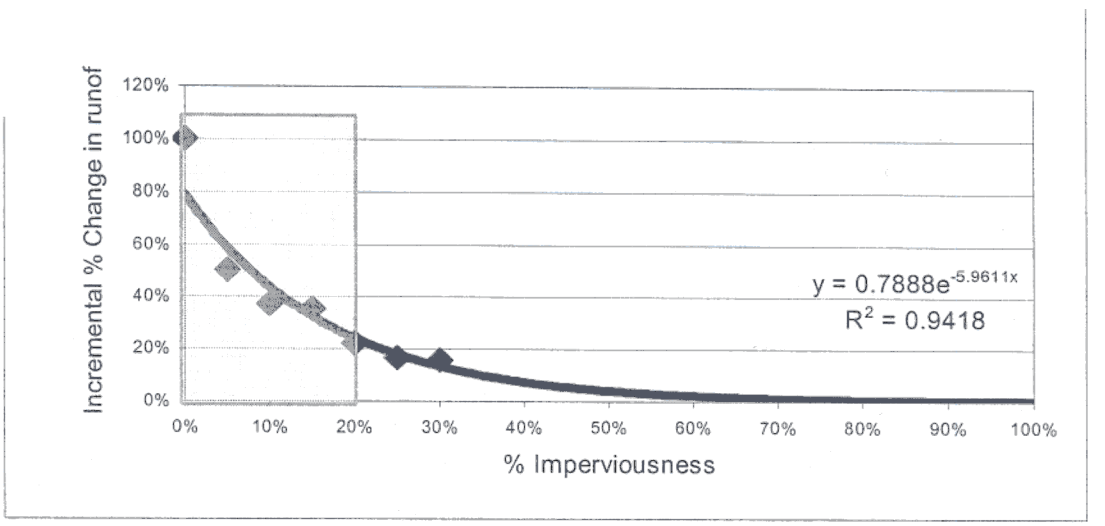


Figure 1 shows a simple linear relationship but it is important to note that this graph depicts runoff increases over a typical turf condition and not the typical initial undeveloped condition of an undisturbed-forest; the condition from which most shoreline is initially converted and developed from. It is clearly difficult to select an impervious surface cap or trigger from Figure 1, however, if one looks at the incremental change in runoff as imperviousness increases a much clearer picture is produced. Figure 2 shows the incremental change in runoff as the imperviousness increases. Note that the curve starts steep and then rapidly flattens out illustrating that the largest impact of runoff occurs in the first 10-20% imperviousness.

Figure 2: Incremental Change in Runoff with Increase in Impervious Area
(Summary of SLAMM Model Runs)



Research studies reviewed on the impacts of imperviousness can be divided into two categories, the changes in runoff characteristics from impacted and non-impacted sites and condition changes in the receiving waters as a result of land use change.

An investigation completed by Dennis, (1985) considered paired watersheds to determine changes in phosphorus export from a low-density residential versus a forested watershed near Augusta, Maine. The residential watershed was 3.5 ha (8.65 acres) in size and was 15.2% impervious area while the predominantly forested watershed was 2.35 ha (5.81 acres) in size with 0.5% imperviousness. The study sites had very stony fine sandy loam soils with 6 to 7% slopes. Both stream flow and total phosphorus concentrations were monitored at the outlet of each test watershed for 8 storm events. The results of the study showed that the geometric mean of the ratios between the developed and forested watersheds for runoff volume was 1.7:1;for peak discharge 2.6:1; for flow-weighted mean phosphorus concentration 4.3:1 and for phosphorus export 7.2:1.

A study completed by Wang et al., (2003), WDNR Bureau of Integrated Science Services examined the relationship between the amounts and spatial patterns of urban land cover and fish assemblages, physical habitat, base flow and water temperature at 39 cold water trout stream sites in Minnesota and Wisconsin. The results of the study indicated that at a connected imperviousness value of less than about 6%, impacts to the fish IBI were minimal. For imperviousness between 6 and 11%, minor changes in urbanization could result in major changes in stream fishes and for imperviousness greater than 11%, IBI values were inevitably low. In addition, the study found that the land cover within 30 m of the stream channel explained considerably more variance in fish assemblages and in stream habitat and physical conditions than land cover beyond 30 m.

A comprehensive review of published research works on receiving water habitat changes resulting from changes in imperviousness is summarized in Table 1 from Schuler and Holland, (2000). This summary includes peer reviewed research projects from 1979 through 1994.

Table 1

A summary of stream studies examining urbanization and stream quality (Schuler and Holland, 2000)

Ref.	Year	Location	Biological Parameter	Key Finding
Booth	1991	Seattle	Fish habitat/ channel stability	Channel stability and fish habitat quality declined rapidly after 10% imperv.
Galli	1994	Maryland	Brown trout	Abundance and recruitment of brown trout declines sharply at 10-15% imperv.
Benke *et al.*	1981	Atlanta	Aquatic insects	Negative relationship between number of insect species and urbanization in 21 streams
Jones and Clark	1987	Northern Virginia	Aquatic insects	Urban streams had sharply lower diversity of aquatic insects when human population density exceeded 4 persons/acre. (estimated 15-25% imperv. cover)
Limburg and Schimdt	1990	New York	Fish spawning	Resident and anadromous fish eggs and larvae declined sharply in 16 tributary streams greater than 10% imperv.
Shaver *et al.*	1994	Delaware	Aquatic insects	Insect diversity at 19 stream sites dropped sharply at 8 to 15% imperv.
Shaver *et al.*	1994	Delaware	Habitat quality	Strong relationship between insect diversity and habitat quality; majority of 53 urban streams had poor habitat
Schueler and Galli	1992	Maryland	Fish	Fish diversity declined sharply with increasing imperv., loss in diversity began at 10-12% imperv.
Schueler and Galli	1992	Maryland	Aquatic insects	Insect diversity metrics in 24 subwatersheds shifted from good to poor over 15% imperv.
Black and Veatch	1994	Maryland	Fish/insects	Fish, insect and habitat scores were all ranked as poor in 5 subwatersheds that were greater than 30% imperv.
Klein	1979	Maryland	Aquatic insects/fish	Macroinvertebrate and fish diversity declines rapidly after 10% imperv.
Luchetti and Fuersteburg	1993	Seattle	Fish	Marked shift from less tolerant coho salmon to more tolerant cutthroat trout populations noted at 10-15% imperv. at 9 sites
Steedman	1988	Ontario	Aquatic insects	Strong negative relationship between biotic integrity and increasing urban land use/ riparian condition at 209 stream sites. Degradation begins at about 10% imperv.
Pedersen and Perkins	1986	Seattle	Aquatic insects	Macroinvertebrate community shifted to chironomid, oligochaetes and amphipod species tolerant of unstable conditions.
Steward	1983	Seattle	Salmon	Marked reduction in coho salmon populations noted at 10-15% imperv. at 9 sites
Taylor	1993	Seattle	Wetland plants/ amphibians	Mean annual water fluctuation was inversely correlated to plant and amphibian density in urban wetlands. Sharp declines noted over 10% imperv.
Garie and McIntosh	1986	NewJersey	Aquatic insects	Drop in insect taxa from 13 to 4 noted in urban streams
Yoder	1991	Ohio	Aquatic insects/ fish	100% of 40 urban sites sampled had fair to very poor index of biotic integrity scores

Proposed Language, Implementation, and NR 151:

The science clearly supports that once 5% imperviousness is reached, runoff that goes unmitigated or untreated will have significant adverse impacts on the receiving waterbody. Please note that the exact point at which a waterbody becomes impacted is dependent on other factors such as scale and type of waterbody. The effect of imperviousness is both location dependent and a lessor degree scale dependent. For example, a seepage lake is going to respond much stronger to changes in impervious areas along the shoreland than a large lake with a large drainage area. Also, the effect of development further upstream from a waterbody may not have as direct an influence as development along the shoreland. This is important to note because the current proposed NR 115 language is not as stringent as NR 151 language. NR 151 requires infiltration and reduction of TSS loads by 80%. NR 151 applies to sites one acre or larger and thus will apply to most upland development which is generally in the form of subdivsions. NR 151 does not apply to sites smaller than 1 acre, which is typical of shoreland development. Thus, due to typical development practices and patterns, there is an inconsistency in the application of our standards. Given the current NR 115 language, the DNR will require less as we get closer to the water resource that we are trying to protect.

The proposed language we would like to put forth is:

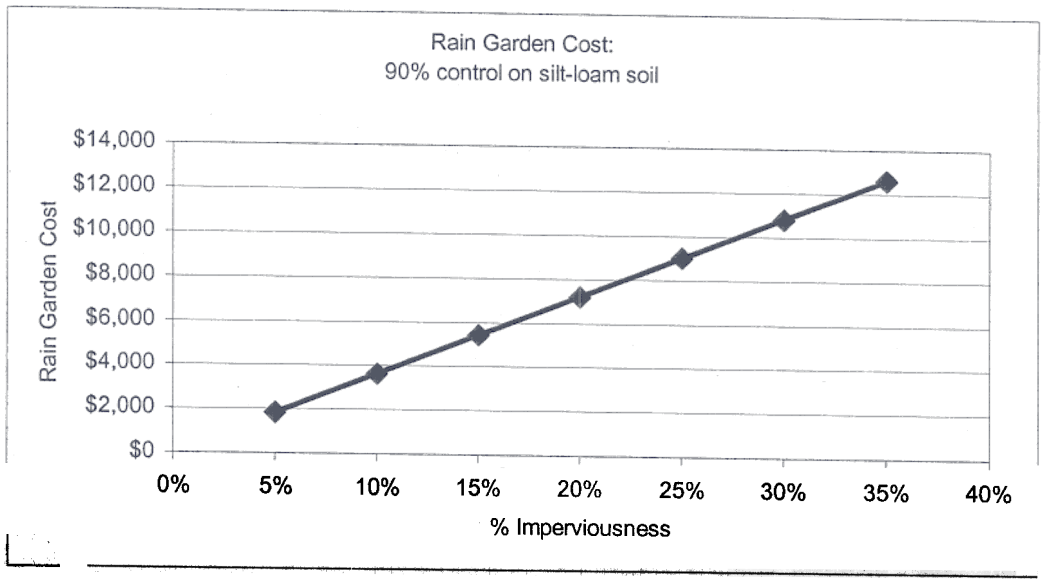
> *New construction shall not exceed 5% impervious unless 90% of the post construction runoff is controlled. Redevelopment shall be required to control runoff from any new impervious surfaces.*

The proposed language appears vague, however, as proposed at the June 24th NR 115 Advisory Committee, the DNR will create a guidance document that will outline a selection of best management practices that could be utilized to meet the 90% goal. The proposed language coupled with the DNR guidance more closely mimics the protections to water quality found in NR 151 without the specific design or modeling requirements found in NR 151. Realizing that much of the shoreland development and redevelopment will be in the form of residential development, the selection of BMPs will be consistent with practices that can easily be afforded and implemented by a homeowner or landscape firm

BMP Options and Cost Estimates:

Proposed practices include disconnected imperviousness, porous pavement, rain gardens and other infiltration practices, treatment swales, and adequate buffers. Figure 3 provides a cost estimate for a 1-acre site implementing rain gardens to treat 90% of the runoff. Note that these costs assume roughly $10/square foot for rain garden construction and assume no other landscaping has been performed and that the garden is professionally installed.

Figure 3: Rain Garden Treatment Costs
(2003 dollars – provided by Roger Bannerman)



Rain gardens coupled with disconnected imperviousness are one of the methods that could be employed. The rain gardens will provide landscaping and mitigate the effects of imperviousness.

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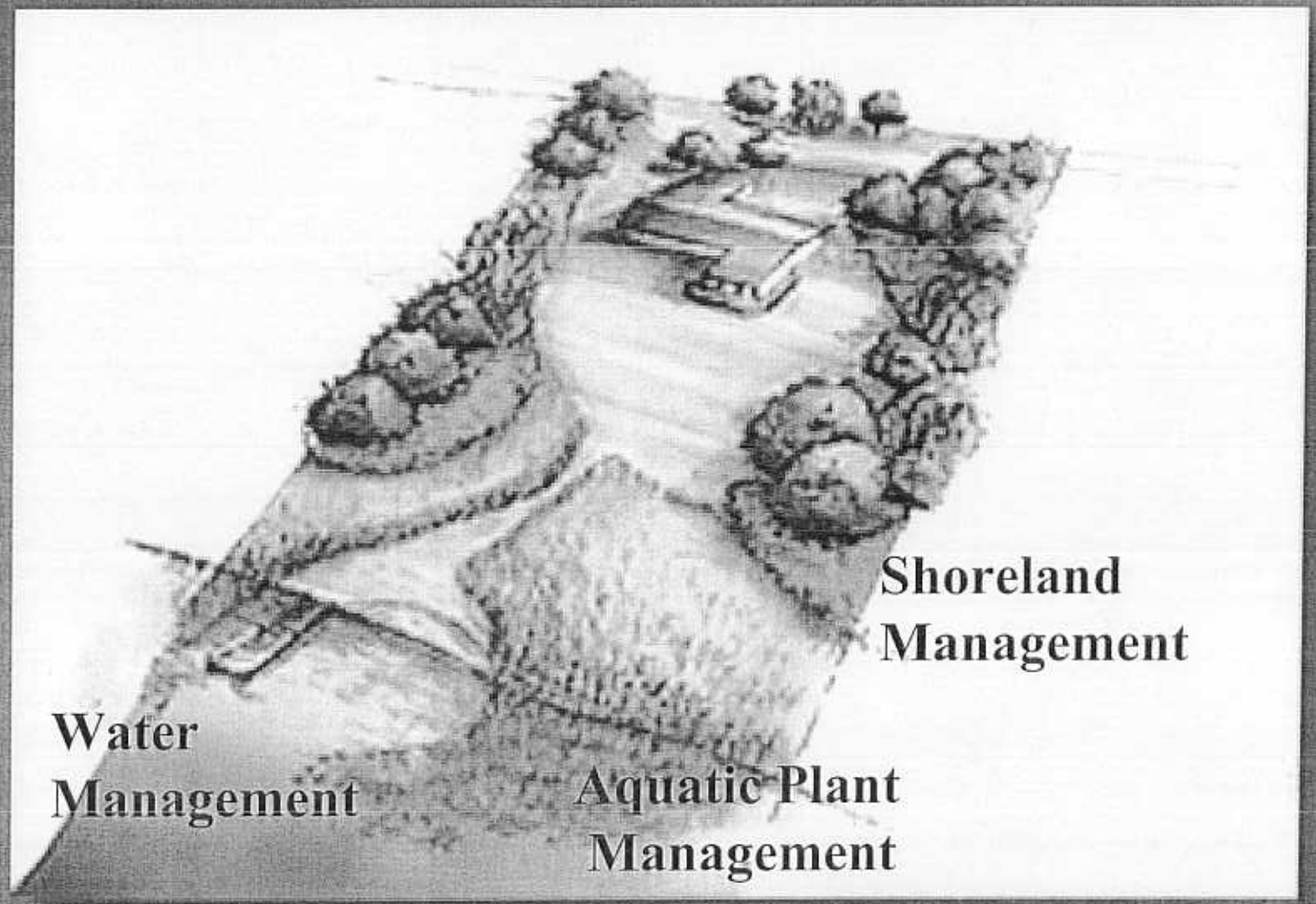
Integrated Management



From: Rosalie Schnick
(put in binder for letters + scanning)

COMMENTS: NR 115—PROPOSALS TO UPDATE WISCONSIN'S SHORELAND MANAGEMENT PROGRAM

INTRODUCTION

These potential regulations by the Wisconsin Department of Natural Resources (WDNR) will have increased adverse impacts on the shoreline owners on Lake Onalaska and other parts of the Upper Mississippi River (UMR) system. These regulations are written to address habitats and issues in northern Wisconsin lakes that do not take into consideration the uniqueness of the UMR system. All of these proposed regulations are more restrictive than were previous regulations. These previous regulations have been unevenly enforced without any recourse on the part of the shoreline owner. There are few provisions that were not changed from the current law and there are no provisions for recommending the status quo. The justification for these radical changes has not been made for the UMR system.

Key Point: The shoreline of the UMR system is managed mainly by the Corps of Engineers (COE) and this fact **MUST** be considered when any shoreline regulations are considered by the WDNR.

GENERAL POINTS

1. The shorelands of the UMR system are so unique that the WDNR should be required to (1) develop separate regulations together with the other agencies involved in the management of the UMR system or (2) provide for exceptions in NR 115 for the UMR system taking into account the regulations of the other agencies involved in the management of the UMR system. The reasons for requiring either option are listed below:
   a. The UMR system was constructed to provide for a high volume navigation system.
   b. The UMR system is a federally regulated water body; therefore, any regulations should be agreed upon by all agencies (federal, state, county) involved in the management of its resources so that there is clarity, lack of confusion, and uniform regulations on the whole UMR system.
   c. The UMR system is managed by federal agencies for economic purposes (barge traffic), recreational use (including access to the water), and natural resources; thus, it is a multiple use system requiring regulations from those agencies involved in the UMR system that consider those uses.
   d. The UMR system is already populated with structures on all sites where there is any possibility of building so there are few opportunities to regulate new building sites.
   e. The UMR system is not a pristine, unaltered body of water but a system altered by the locks and dams that created backwater areas and manmade lakes. There are few opportunities to address the aesthetics that are implicit in these proposed WDNR regulations. There are few areas that have not been disturbed by development and there is no native vegetation

that was present on the shoreline before the UMR system was put in place in the 1930s because the land was not shoreline but rather mainly agricultural land.

f. The COE has its own shoreline management plan for the UMR system that should be considered by the WDNR; however, the WDNR has not worked to resolve differences in the interpretation of the regulations. Included in this situation are all the provisions in the proposed regulations that deal with stabilization of stream banks with riprap or other authorized materials by the COE, management of vegetation (i.e., removing or planting trees), design and use of docks for multiple purposes, multiple uses of the shoreline, location of building structures, etc. In fact, the COE owns a certain amount of the shoreline and not the WDNR.

g. The COE shoreline management plan for the UMR system includes provisions for riprap or other authorized materials to control erosion; however, the proposed WDNR regulations does not address the whole issue of minimizing erosion on the UMR system. The reasons erosion control is so important in the UMR system are the following:

   i. Much traffic from very large cruisers, other private boats, and commercial barges causes severe fluctuations in the wave action that in turn causes severe stream bank erosion.

   ii. Periodic major floods that require shoreline owners to protect their property with riprap or other materials authorized by the COE.

   iii. Extended and severe wave action from wind fetch over great distances (e.g., Lake Onalaska is five miles long and two miles wide).

h. The Comprehensive Master Plan for the Management of the Upper Mississippi River System under the guidance of the Upper Mississippi River Basin Commission was developed to offset or reduce the impacts of development and included provisions for controlling stream bank erosion to reduce (1) sedimentation that is contributing to loss of aquatic habitat, (2) sedimentation that is shortening pool life, (3) sedimentation that is increasing flood elevations, (4) impacts of dredged material and fine sediment in backwater areas, and (5) dredging requirements. The proposed WDNR plan does not address these issues that are of great importance in the UMR system and to its shoreline owners.

2. There are no provisions in the proposed regulations for (1) recourse for a shoreline owner if the WDNR decides to pursue uneven or excessive regulations, (2) resolution of differences in interpretation of these regulations with the COE's interpretation of shoreline regulations, or (3) even considering the stream bank management plan for the UMR system by the COE. There are many examples of this happening in the UMR system.

3. Proponents of NR 115 claim it will provide more flexibility in the program but it is difficult to find the flexibility in the new proposals.

4. The proposed rules in NR 115 address zoning issues that will lead to conflicts between counties and the WDNR over different interpretations of the regulations—where are the procedures for addressing these differences?

SPECIFIC POINTS

Here are some points to consider when commenting on these proposed rules:

I. Shoreland Buffers

Primary buffer depth: Proposal for either a 35-foot or 50-foot primary buffer zone (means having native shoreland vegetation only).

In the current law, there is no provision for native vegetation or for a primary buffer zone. There are no areas in the UMR system that have not been disturbed and there is no native vegetation that was present on the shoreline before the UMR system was put in place in the 1930s because the land was not shoreline but, in many cases, was agricultural land. This proposal also would prohibit vegetation removal unless authorized and then these would have to be replaced with native vegetation.

The WDNR has already enforced these provisions before any of these provisions were proposed. The enforcement was uneven and the shoreline owner has had no recourse.

Secondary buffer depth: Proposal for either an additional 25-foot or 40-foot secondary buffer zone (requires maintenance of vegetated buffer—turf, groundcovers, or native vegetation). In the current law, there is no provision for vegetation or for a secondary buffer zone. Again, native vegetation was not present on the current shoreline; rather most of the vegetation consisted of agricultural crops.

Viewing Access Corridor (VAC): Proposal for either a 30-foot or 50-foot wide VAC that connects the secondary buffer to the waterfront. The purpose of this proposal is to obscure the view of the water by the shoreline owner and mask the location of the buildings from persons using the water. The UMR system is not in a remote pristine area where the desire is to hide buildings. It makes no sense to try to cover up human habitation in the UMR system when much of the land was open agricultural land without many trees before the locks and dams were put in place and currently accommodates a large amount of barge, private boat, and train traffic with railroad tracks located everywhere in the UMR system.

II. Ordinary High Water Mark (OHWM) setbacks: Proposal for a setback of 75 feet from OHWM will be required for all structures, except piers and boat hoists, and structures for handicapped persons.

Many structures were already in place a great distance from any shoreline until the locks and dams flooded lowlands and thus, bringing these structures well within a 75-foot setback. It makes no sense to try to make these regulations fit an existing situation that is so different from any of the natural water bodies in Wisconsin.

III. Nonconforming Structures: offering options for minimum size, total size, and structures in more than one buffer zone.

The question is why should the WDNR have jurisdiction over zoning laws when that is a function of the counties?

IV. Minimum Lot Size—Single Family Homes, Duplexes and Commercial Development

The question is why should the WDNR have jurisdiction over lot sizes when that is a function of the counties?

V. Minimum Lot Size—Multiple Family Developments, Hotels, Motels and Resorts

The question is why should the WDNR have jurisdiction over lot sizes when that is a function of the counties?

VI. Lot size Reduction for Conservation Development (previously no provisions)—could dedicate a portion of the property in a permanent conservation area by reducing the lot size.
VII. OHWM Setback Reductions and Nonconforming Lot Provisions
VIII. Filling, Grading, Lagooning, Dredging, Ditching and Excavating

Retaining Walls—may be permitted only if necessary to control erosion that other nonstructural methods cannot address and if the primary buffer is preserved or restored.

Retaining walls have been discouraged or prohibited by WDNR even when they are needed. The WDNR has (1) required that retaining walls could not be made of manmade blocks but required boulders that are not naturally present on the UMR system and (2) not allowed shoreline owners to repair retaining walls.

Although WDNR does not address riprap to control erosion in these proposed regulations, this agency has regulated the placement of it in the past. This is a COE function but yet WDNR has in some cases (1) prohibited the use of riprap, (2) not allowed the shoreline owner to built the riprap high enough to protect the shoreline from erosion from flood wave action, and (3) required black dirt and grass to cover riprap that will wash out into the body of water during flood events thus polluting the UMR system.

IX. Imperious Surface Provisions (previously no provisions): Proposal to limit imperious surfaces within shorelands to 2,500 square feet or 20% of the lot area, whichever is less. Shorelands are 1,000 feet from a lake, pond, or flowage or 300 feet from a river or stream.

WDNR has attempted to regulate these surfaces before without any regulations or laws to back them up; now, this agency would have the license to tell every shoreline owner exactly what can be done on their property to 1,000 feet from the shoreline. This is not acceptable especially in the UMR system where structures were in the setback zone before the locks and dams were in place.

X. Mitigation Provisions (previously no provisions)—When mitigation is triggered it shall require, at a minimum, the preservation or restoration of the primary buffer and may include additional mitigation measures as required by the permitting authority.

Mitigation means actions that would be taken that minimize adverse impacts of development. The whole UMR system is already developed with structures all along the shoreline so there are few areas that have not have existing structures. Again, there are no areas that have not been disturbed and there is no native vegetation that was present on the shoreline before the UMR system was put in place because the land was not shoreline before the dock and dam system was constructed but, in many cases, was agricultural land.

Mitigation measures must take into consideration the COE regulations for shoreline management and stream bank stabilization.

XI. Agriculture (previously no provisions)
XII. Forestry (previously no provisions)
XIII. Recreational Areas Including Campgrounds, Public Access Sites and Marinas (previously no provisions)
XIV. Sanitary Regulations
XV. Other Issues

15b. Do you have any concerns about topics that were not address in the NR115 Advisory Committee's preliminary recommendations to update Wisconsin's Shoreland Management Program? Please explain.

See the Introduction and General Points noted above.